

# **Fire Lizards at Dark**

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It's a blustery day in late March, the cloudy sky an odd yellowish-green in the fading light that makes me uneasy as I drive down Dexter backroads that I should know the names of. I'm just starting to wonder whether I should've stayed home when I pull into the Hudson Mills Metropark parking lot to see a surprisingly large group of adult figures already gathered at the nearby picnic shelter. It turns out I am not the only person willing to donate \$5 to walk through the metropark after dark until 10:00 pm, getting my feet and pants muddy, for the chance to see a blue- or yellow spotted salamander for the first time.

You might be surprised to learn that Michigan is home to ten species of salamander, seven of which can be found in the Hudson Mills park alone. North America is actually the salamander capital of the world, with more than 150 salamander species (about one-third of all known species) found on the continent and 77 different species in Appalachia alone. And yet, fewer people have ever seen these mesmerizing creatures.

Salamanders are not lizards, despite their lizard-like appearance. They have been good at hiding themselves from humans for centuries: the word salamander is Greek for "fire lizard," as salamanders have a long mythological history of immunity to fire, or even the power to control it. Salamanders aren't any more likely to be near a fire than any other salamander, but ancient people didn't know this when they'd throw a log onto a fire and see salamanders squirming out. Rather than immune to fire, they flee from it, unlucky enough to have been picked up at the same time as the log they were hiding under that day.

Just like frogs, salamanders have a two-part life cycle in which fully-aquatic larvae, complete with gills and tails, grow up to be mostly-terrestrial adults. Mole salamanders, such as the spotted salamander (*Ambystoma maculatum*), the blue-spotted salamander (*Ambystoma laterale*), and the tiger salamander, live nearly their whole lives underground. They inhabit the

tunnels created by root systems of trees and rely on vernal pools to lay their eggs in the spring - - “vernal” meaning “spring” as in “these pools are only existent in depressions in the ground that fill with meltwater from snow.” Salamanders inhabit vernal pools primarily because these habitats lack predators and competition from fish, which need constant bodies of water to survive. Salamanders and frogs, being neither completely aquatic or terrestrial, and uniquely poised to take advantage of these seasonal bodies of water: they emerge early in the spring to lay their eggs, which hatch into tadpoles (frogs) or larvae (salamanders) that begin a race against nature’s clock to eat and grow into their adult form before pools dry up in early- to mid-summer.

As the metroparks interpreter explained all of this to the gathered crowd, I surveyed the eagerly upturned faces of the thirty or forty adults circled around the concrete pad of the picnic shelter. Everyone was wearing a variation on the same outfit: bundled lightly against the gentle cool of the windy spring evening, in a pair of rubber boots, and clutching a headlamp or flashlight. I was impressed by everyone’s preparedness - nobody had come just to lay eyes n a salamander and leave, rather we were all committed to a night of searching

As we intently strained to hear details about salamander life cycles over the gusting wind and the arguing of a pair of sandhill cranes, I was transported back to middle school science class, where I was made to sit through explanations of food webs and biogeochemical cycles, squirming against the urge to blurt out interjections or take over the lecture altogether. I knew a lot more about the science we were learning back then, since my mom worked as an environmental educator with our local watershed council and would often take me along on river monitoring trips. So yes, I knew all the facts and wanted to show off to my teacher that I’d picked dragonfly larvae out of kicknets, measured dissolved oxygen, strapped myself into

too-big waders and gone splashing through the Huron River at Island Park. I'd *touched* science, had the opportunity to realize it wasn't some mysterious ritual only for highly trained professionals - and it filled me with a buzzing excitement. Science belonged to me and so I cared about it more than many of my middle school classmates ever did.

I wondered how many of these people, ranging from approximately college-aged to in their seventies, had any actual science background. Like in middle school, as the interpreters continued talking, I longed to be quizzed on some amphibian fact where I could prove my legitimacy to these people. *I know all of this stuff already!* I wanted to say. *I'm a scientist too!* But the interpreter continued to add facts that I didn't know, like how salamanders prefer a cooler temperature than frogs and are most active on cold rainy nights, and so I was forced to sit with my thoughts and play the role of just another curious citizen attending a public educational event. I was surprised to find it a slightly uncomfortable role - an unsettling realization for someone who claims to promote citizen science and advance science accessibility through her writing.

It gets easier to find a wild animal the more times you've seen whatever you're looking for, but there are still some days when you can go out looking for hours and find nothing. Herping (the slang version of *herpetology*, the study of amphibians and reptiles) is often a game of patience. There's no substitute for sitting in the mud staring into darkened water for ten minutes as you imperceptibly adjust your senses to the surroundings and the creatures carefully creep back from wherever they scurried to when you come crashing through the branches to find this spot, and so a hour after we had first gathered, that is exactly what our group of enthusiastic, full grown adults were doing. Dispersed around a vernal pond roughly thirty feet in diameter, we shuffled around the water's edge nervously shining lights into the water and poking around with

little blue fish nets hoping to see a salamander. By now the sun had really set and the sky was a hazy midnight blue, so you could see each person around the pond only as the beacon of light emanating from their forehead or hand - little white stars ringing the pool. We shuffled and poked and whispered like this for maybe fifteen minutes before I heard someone close to me gasp "Oh there! I saw something!"

One of the metroparks interpreters closest to us came over to take a look, and within thirty seconds had the four inch long salamander in his net, its wet skin gleaming under the light of many headlamps. It was a blue spotted salamander, with a smooth brownish-back body interrupted with speckles of pale blue along its sides and belly that reminded me of snowflakes. It attempted to climb out of the net, its smooth tiny body rippling as it moved before the interpreter tipped it into a smooth-walled white plastic tray filled with a shallow layer of water so the salamander wouldn't get too dry, and handed the tray to the closest person to hold - which happened to be me. I slightly-smugly accepted the tray as the salamander lifted itself up on its front limbs and swiveled its spade-shaped head as if surveying the many human eyes gazing down upon it. It met my awed gaze with alert, shiny black eyes of its own, as if to say *"I am not here for your enjoyment. Consider it an honor to be in my presence."*

By then, other participants had heard our gasps of excitement and a small crowd was gathered around the salamander in the tray, people moving in and out of the inner circle in an orderly fashion as they took photos or just caught a glimpse of the creature of the evening. I was shocked to realize that nobody was pushing or perpetually blocking the best camera angle. Everyone was being considerate and willing to share. It was so bizarre, and in that moment I felt myself let down that slight shield of science snobbiness I'd been carrying since the start of the night. It didn't matter who we were or how much we knew - we were all just people there to see

a salamander. It was a creature that each of us had the right to experience, and each of us shared the responsibility to make sure that everyone else had that opportunity too.

Luckily that was not the only salamander of the night. Soon everyone had spread out again and it seemed like there was a quiet shout of “I found one!” from a different part of the pond every five minutes. All of our eyes started to tune to the movement of black tails whipping under decaying leaves on the bottom of the pond, to the momentary disruption of surface tension as small snouts poked above the surface of the water to breathe, and to the the golden eyes of the curious wood frogs who crept up to watch us from the surface once they realized that they were not the target of our searching.

As the night went on, we pulled in more blue spotted salamanders but also yellow-spotted ones and tiny, agile neon-orange newts. We’d hold each in the tray and pass it around for a few minutes, giggling as the salamanders nonchalantly climbed over each other and angling our headlamps to help everyone get the best lighting for photos. Then, we’d gently slip the salamanders back into the water and return to searching, moving back and forth around the pond and mingling with different groups. After about two hours, we stopped netting them altogether and just pointed them out to each other. The star of the night was a seven inch long female yellow spotted salamander, midsection bulging with soon-to-be-laid eggs, that kept appearing and disappearing beneath the leaf litter just out of reach of our nets.

As the night deepened, chorus frogs joined the peepers droning from somewhere in the middle of the pond. There was a magic in the air generated by our collective focus and enthusiasm. Here were a bunch of strangers, most of whom had never seen a salamander before and probably showed up expecting to see one or two, now working together to locate and

identify salamanders for themselves. Give a person a salamander and they'll stare at it in awe. Teach a person to find a salamander and they'll be out herping every cool rainy spring night for the rest of their life. Or something like that. And all around, careful murmurs of "I don't want to step on anything" and "You don't have to catch him, I'll just look" conveyed an attitude of care for the ecosystem.

Most of us living in cities and towns today are extremely detached from the workings of those ecosystems. It's not that people don't care about the frogs and the salamanders. The number of full grown adults who showed up on a windy night at Hudson Mills to learn how to find salamanders on a cold, breezy night in March is evidence that many people do. It's in our human nature to be observant, but it seems as we grow older, we are told that we're not supposed to spend our time listening and observing the small things, and so we tune out the possibility of knowing what might be living under the rocks and in the marshy spots of our own backyards.

On the trek back to the parking lot through a considerably darker forest several hours later, I found myself at the front next to the first interpreter from earlier in the program.

We discussed the evening's success - "I wasn't sure we'd be able to find any, since it hasn't rained for a few days," she explained - and compared notes of which species we'd observed so she could contribute data to the Michigan Vernal Pool Patrol Database, a statewide program utilizing citizen scientists to document the location and status of vernal pools statewide.

"They were just so cool," I reflected about the salamanders I'd seen that night. "I knew they lived in Michigan but didn't know they were right *here*."

"That's exactly the goal of programs like this," she replied. "If people don't ever see these creatures, they won't ever really care about protecting them."

At one point, a volunteer naturalist who was assisting the interpreters told us a story about how, when he immigrated to New York City from Puerto Rico as a child, he would go out and look for salamanders in inconspicuous ditches and streams in Manhattan parks. That's right, there are wild salamanders in Manhattan - including a thriving population of northern dusky salamanders, a species that needs ultra-pure water, constant shade, and minimal disruption from humans. These are not teenage mutant ninja salamanders - somehow these salamanders managed to find their precise habitat conditions *in the most densely populated borough of New York City*. If they can exist there, what other urban wildlife are we missing, simply because we don't know it's out there? And how many more people might be convinced to care about these natural areas and species, if they could just see what was out there to protect?